

**-HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY-**

# **Exhibit 300**

**FILED UNDER SEAL**

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

SPECTRUM DYNAMICS MEDICAL  
LIMITED,

Plaintiff,

v.

GENERAL ELECTRIC COMPANY, GE  
HEALTHCARE, INC., GE MEDICAL  
SYSTEMS ISRAEL LTD., JEAN-PAUL  
BOUHNIAK, SERGIO STEINFELD, ARIE  
ESCHO and NATHAN HERMONY

Defendants.

Case No.: 18-cv-11386 (VSB)

**DECLARATION OF TODD PETERSON IN OPPOSITION TO PLAINTIFF'S MOTION  
FOR PRELIMINARY INJUNCTION**

*I, Todd Peterson, Ph.D., pursuant to 28 U.S.C. § 1746, declare as follows:*

1. I am currently employed at Vanderbilt University Medical Center as an Associate Professor of Radiology and Radiological Sciences. I have over 20 years of experience using, testing, evaluating, and designing nuclear medicine (NM) imaging systems, including both SPECT and PET scanners. I am familiar with the state of the art relating to NM imaging systems during all relevant time periods addressed in Plaintiff's Motion for Preliminary Injunction by virtue of my work with such systems, my review of technical papers, patents, grant applications, and other publications relating to these systems, and my frequent attendance at conferences presenting new developments relating to NM imaging systems.

2. I have been engaged by Defendants (collectively "GE"), at a rate of \$360 per hour, to provide technical assistance and advice in the above-captioned litigation, and to testify, if needed, as an expert witness. My opinions are my own, do not represent those of my employer,

and are not affected by my compensation. Likewise, my compensation is not contingent in any way upon the results of my work or upon the outcome of the litigation.

**I. Summary of Opinions**

3. I have been asked to review Plaintiff's Preliminary Injunction Brief (Doc. 356) and the exhibits and declarations submitted in support thereof, as well as additional documents produced by the parties in discovery, and to analyze whether the information Plaintiff claims to have disclosed to Defendants, including structural and functional details of Plaintiff's proposed general purpose camera/concept ("GPC"), was confidential information and/or used by Defendants. Based on my familiarity with the state of the art relating to NM imaging systems during the relevant time periods, my review of patents and publications from the relevant time periods, and my review of documents produced by the parties during discover in this case, it is my opinion that:

- a. All material aspects of the GPC that Spectrum presented to GE in September 2009, were already a matter of public information through prior art patents including U.S. Patent No. 6,242,743 to DeVito and GE's own U.S. Patent No. 7,592,597 to Hefetz. Specifically, general purpose SPECT imaging systems were already known having:

- (1) [REDACTED]
- [REDACTED]; (2) [REDACTED]
- [REDACTED]; (3) [REDACTED]
- [REDACTED]; (4) [REDACTED]
- [REDACTED]; and (5) [REDACTED]
- [REDACTED]
- [REDACTED]

- b. Spectrum and others publicly disclosed all of the features of Spectrum's GPC during the due diligence period, thereby putting the information in the public domain. In particular, Spectrum disclosed through its published patent applications and publications in 2011 and 2012 a GPC having: (1) [REDACTED]; (2) [REDACTED]; (3) [REDACTED]; (4) [REDACTED]; (5) [REDACTED]; and (6) [REDACTED].
- [REDACTED] At first Spectrum publicly disclosed various embodiments of such GPCs, including an embodiment with [REDACTED]. Then Spectrum publicly disclosed its [REDACTED]. Spectrum also publicly disclosed that the [REDACTED].
- c. Almost immediately after due diligence discussions with GE concluded, Spectrum publicly disclosed through its '721 PCT, the exact dimensions of its GPC collimator, including its [REDACTED] configuration, as well as an exemplary embodiment in which the GPC had detector columns [REDACTED]. Spectrum's '721 PCT also publicly disclosed that the GPC would use [REDACTED].

- ████████████████████. By no later than November 2013, Spectrum had publicly disclosed every feature of its GPC that it alleges GE misappropriated.
- d. Spectrum's claims regarding its simulation of the GPC in June 2010, GE's inability to conduct simulations of the GPC, and Spectrum's alleged disclosure of the concept of a ██████████ collimator to GE are not substantiated by the contemporary documents made available to me for review.

## **II. Qualifications**

4. As per my curriculum vitae (Ex. 300-1), after completing my BA in Physics at Gustavus Adolphus College in 1991, I spent two years at the University of Oxford as a Rhodes Scholar, where I studied Physics & Philosophy. I received my PhD in physics in 2000 from Indiana University, where my dissertation research was in the field of experimental nuclear physics.

5. My introduction to the field of nuclear medicine imaging came in the form of a postdoctoral research position in the Center for Gamma-Ray Imaging at the University of Arizona. The major focus of my research during this time was on high-resolution SPECT imaging using cadmium zinc telluride (CZT) detectors.

6. From my time as a graduate student in nuclear physics to my present position as a faculty member in the Department of Radiology at Vanderbilt University Medical Center, I have collaborated with, mentored, and led multi-disciplinary teams of physicists, engineers, and technicians in the design, construction, testing, and utilization of physical apparatus for radiation detection and imaging.

7. In recognition of my contributions to the field of medical imaging, I have been elected as a Fellow of both the American Institute of Medical and Biological Engineering (AIMBE) and the Society of Nuclear Medicine and Molecular Imaging (SNMMI).

8. A full listing of my education, appointments, professional service, publications, and presentations appears in my curriculum vitae (Ex. 300-1).

### **III. Background of SPECT Technology**

9. Single photon emission tomography, or SPECT, is a medical imaging method that provides information on the biological function of tissue for medical diagnosis. A SPECT study begins with injection of a radiotracer. The radiotracer is made up of molecules that are each labeled with a radioactive isotope. The molecules are chosen based on their ability to accumulate preferentially in certain tissues or organs, and many radiotracers targeting different organs or disease states have been created. As the radiotracer decays, it emits gamma-ray photons. A camera positioned near the body converts signals from the gamma-ray photons to produce 2-D projection of a section of the body. This camera consists of a collimator to constrain the angles at which incident photons are transmitted and a radiation detector to convert incident gamma-ray photons into electrical signals, individually recording their energy and interaction location. When 2-D projections are collected over a range of angles, 3-D images of the radiotracer distribution can be created through a process referred to as image reconstruction.

10. SPECT imaging can be traced back to the 1950's and the development of a camera capable of recording the 2-D spatial distribution of gamma-ray emissions, with the earliest SPECT imaging performed soon thereafter by rotating the patient in front of the camera. SPECT imaging is now used to conduct a wide array of imaging procedures, from planar renal and bone scans to studies of cerebral blood flow and myocardial perfusion. Resultingly, SPECT systems are highly desired in hospital systems as a general-purpose diagnostic system. Until the recent development, by GE and others, of systems utilizing CZT detectors, nearly all SPECT systems were based on

the same technology as the original gamma camera, a scintillator positioned behind a lead collimator and read out by photomultipliers.

**IV. The State of the Art Prior to the Parties' September 2009 Meeting**

11. Plaintiff claims to have first revealed “6 main concepts” of its GPC to GE at a meeting held in September 2009. (Doc. 356 at 21-22.) Specifically, Plaintiff claims to have disclosed to GE a GPC design with: (1) [REDACTED]; (2) “[REDACTED]”; (3) [REDACTED]; (4) [REDACTED]; (5) [REDACTED]; and (6) [REDACTED] (*Id.*)

12. Based on my review of the portion of the transcript of that meeting cited by Plaintiff (Ex. 57 at 26:19-27:15) and the PowerPoint presentation given by Spectrum during the meeting (Ex. 55), I do not see that Spectrum revealed any detail regarding the proposed collimator for its GPC, other than it being [REDACTED]. Nor does it appear that Spectrum revealed any details of Spectrum’s [REDACTED] (Ex. 57 at 26:19-27:15.)

13. Therefore, in my opinion, the material aspects of the GPC system Spectrum disclosed in September 2009, are: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

14. It is further my opinion that GPC systems with each of the aspects listed in the preceding paragraph were already a matter of public information by virtue of having been described and depicted in patents and patent applications published prior to the September 2009 meeting.

15. The additional details of using [REDACTED]  
[REDACTED], which Spectrum did in the years following the September 2009 meeting, causing Spectrum to abandon these details. Spectrum later determined that [REDACTED] for this GPC design and that [REDACTED]  
[REDACTED]. Spectrum also changed the dimensions of its GPC collimator as a matter of expected optimization as the GPC design evolved.

***The DeVito Patent***

16. U.S. Patent No. 6,242,743 (“the DeVito patent”) was filed on Aug. 11, 1998 and issued on June 5, 2001. (Ex. 321.) The first named inventor is Raymond P. DeVito. The named assignee at the time of issuance was Mosaic Imaging Technology, Inc.

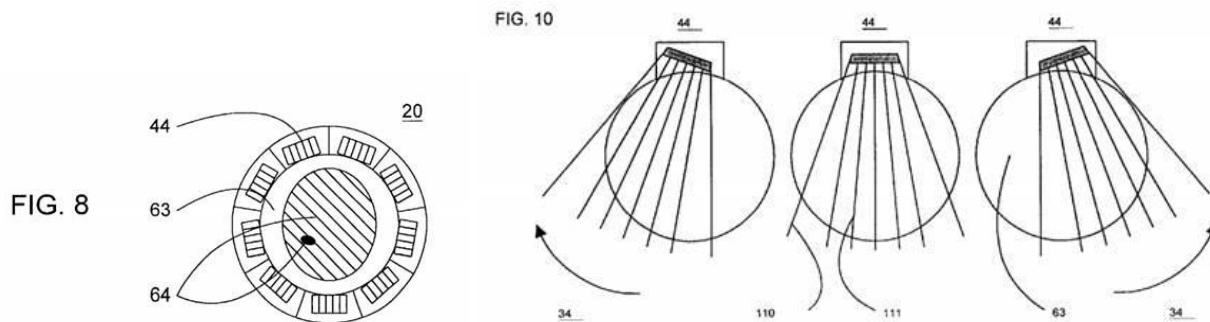
17. Spectrum was aware of the DeVito patent no later than January 29, 2006, when Spectrum’s Chief Technology Officer, Yoel Zilberstien, began inquiring of others about Raymond DeVito and the DeVito patent, stating [REDACTED]  
[REDACTED] (Ex. 362.) However, Mr. Zilberstien cautioned that [REDACTED] (*Id.*)

18. In 2007, [REDACTED] (See Exs. 319-320); Ex. 57 at 30:3-9.)

19. With respect to the state of the art in 1998, the DeVito patent teaches:

- “Conventional gamma camera detectors used for medical imaging have a large, flat field of view (typically about 300 in.<sup>2</sup>) and are very heavy, typically weighing several hundred pounds. These detectors must be made to orbit the patient or object of interest as close as possible (for best image quality) and with a high degree of accuracy and precision. In the current state of the art, large gantries and powerful motors are required to control and accomplish this motion.” (Ex. 321 at 1:49-56.)
- “Many of the current problems in nuclear medicine imaging are caused by the large flat face of the conventional detector.” (*Id.* at 2:15-17.)

20. The solution disclosed by DeVito in 2001 (and subsequently adopted by Spectrum) is a ring of small, independently-movable, swiveling detector modules (identified by reference 44) that encircle an object of interest (64) to obtain 360° views as shown in Figs. 8 and 10 of the DeVito patent, which are reproduced below.



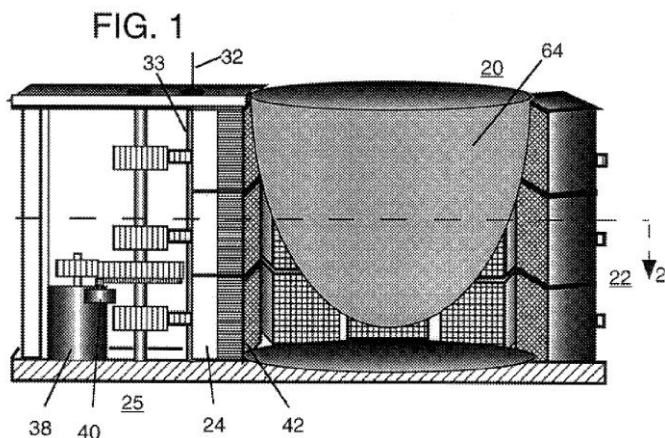
21. The DeVito patent explains that “small detector modules” (*id.* at 5:49) “are distributed around the patient or object of interest” and “[t]he direction of view of the modules is varied according to one or more independent degrees of freedom of motion in a manner ... which involves tilting, swiveling, rotating or translating the module....” (*Id.* at 6:30-35.) Further, “[t]he

aim of such motion is to achieve sufficient tomographic sampling of the object of interest such that a perceptibly artifact-free image can be tomographically reconstructed.” (*Id.* at 6:36-39.)

22. Thus, the DeVito patent teaches that each of its detectors “swivel” to change their viewing direction and increase their field of view. (*Id.* at 18:28-45.)

23. The DeVito patent teaches that its detectors may be “pixelated” “Cadmium Zinc Telluride (CZT)” which is favored due to its “compact size.” (*Id.* at 6:6-18.)

24. In addition, each of the detectors in the DeVito patent is configured in a “column” of stacked CZT modules. For example, FIG. 1 of the DeVito patent, which is reproduced below, depicts five detector columns (only two of which are visible from the side), each formed from a 3x1 array of CZT modules (identified by reference number 24). (*Id.* at 17:43-65.)



25. The DeVito patent also teaches that the shape of the detector module ring may be “dynamic (variable)” either during or between image acquisition through independent radial (i.e., translating) movement of the detector columns to contour the object to be imaged. (*Id.* at 9:50-10:25). Specifically, “the modules are caused to move from one geometric configuration to another thereby changing the shape of the module ring.” (*Id.* at 10:1-3). In one example, one end of a ring of detector columns moves inward to reconfigure the detector ring from a cylindrical geometry

suitable for imaging a leg or arm to a conical geometry that is better suited for breast imaging. (*Id.* at 10:9-18.)

26. The DeVito patent expressly teaches that adequate sampling can be achieved using just the swiveling motion of the detectors, without the need for orbiting motion, for example, on a rotating gantry. Nevertheless, the DeVito patent acknowledges that the detectors in conventional SPECT systems typically “orbit the patient or the object of interest in order to sample from many locations.” (*Id.* at 1:23-27.)

27. Therefore, in my opinion, the DeVito patent publicly disclosed the fundamental concept of the GPC design proposed by Spectrum to GE in September 2009, including the material aspects of: (1) [REDACTED]

[REDACTED]; (2) [REDACTED]

[REDACTED]; and (3) [REDACTED]

[REDACTED]

28. Further, the DeVito patent discloses that [REDACTED]

[REDACTED]

[REDACTED] (*Id.* at 10:52-55.)

#### ***GE’s ‘597 Patent***

29. U.S. Patent No. 7,592,597 (“the ‘597 patent”) was filed on Aug. 3, 2006, *published as US2008/0029704 on Feb. 7, 2008*, and issued on September 22, 2009. (Ex. 314.) The first named inventor is Yaron Hefetz. The named assignee at the time of issuance was GE Healthcare Israel.

30. GE’s ‘597 patent describes [REDACTED]

[REDACTED]. It teaches a SPECT imaging system with a

plurality of small, independently movable CZT detectors capable of radial movement and swiveling motion, all attached to a rotating circular gantry. The pivoting CZT detectors may be arranged in rectangular arrays (i.e., columns) and use tungsten, square hole collimators that are aligned or registered with detector pixels. The '597 patent also teaches utilizing the swiveling motion of the detectors to create a focused scan pattern that spends more time imaging a region of interest than surrounding tissue.

31. The '597 patent articulates the same concept, and reasoning, that Spectrum claims to have first revealed to GE in September 2009, [REDACTED]

[REDACTED]. In particular, the '597 patent explains in great detail that:

In nuclear medicine (NM) imaging, the time required to acquire a scan of a patient can be long, leading to patient discomfort. Furthermore, if the patient moves, the image may be degraded and the scan may need to be repeated. In addition to the cost of the equipment, a high cost of operation may also be realized due to the time and manpower required to operate the equipment. Large size imaging detectors also have limited maneuverability due to their geometry when positioned close to a patient.

In some types of scans, such as when scanning the whole body or with large patients, the portion of the patient being imaged may require the entire field of view of a conventional large size imaging detector. However, when imaging a structure which is smaller than the field of view of the imaging detector, such as the heart, liver, kidney, or a tumor, portions of the imaging detector will acquire patient data outside of the structure of interest. Therefore, an effective sensitivity is decreased which is unrelated to collimator geometrical sensitivity, but rather refers to the opportunity lost by not collecting useful information.

Also, many types of scans require imaging from a number of axial positions around the patient. For example, conventional imaging detectors often acquire data while being rotated by a gantry around

at least a portion of the patient, such as approximately 180 degrees and up to 360 degrees, to obtain sufficient data of the structure for volumetric imaging and processing. This is time consuming, which limits patient through-put, and is prone to error due to patient movement as discussed above.

Therefore, a need exists for methods and apparatus to decrease the time needed to acquire image data of smaller structures during NM imaging.

(Ex. 314 at 1:17-19.)

32. To solve the aforementioned problems, the '597 patent teaches “a Nuclear Medicine (NM) imaging system which has a plurality of small imaging detectors mounted on a gantry” (*id.* at 2:15-17), and explains that “[b]y positioning multiple imaging detectors at multiple positions with respect to the patient[], image data specific to a structure of interest within the patient [] may be acquired more quickly compared to acquisitions using conventional large size detectors.” (*Id.* at 3:35-41.) The '597 patent also explains that “pivoting motion [is] used to increase the effective FOV [(field of view)] of [each] imaging detector” and thereby “increase the sampling of the imaging data” because “[h]aving a largely sampled dataset may improve reconstruction and may reduce artifacts.” (*Id.* at 5:41-51.)

33. FIG. 1 of the '597 patent, which is reproduced below, schematically depicts four imaging detectors 102, 104, 106, and 108 on a gantry 110. However, the '597 patent is clear that any number of detectors is possible. (*Id.* at 2:61-65.) In my opinion, in view of the teachings in the '597 patent, the selection of the number of detectors is just a matter of engineering optimization – just like selecting the diameter of the gantry.

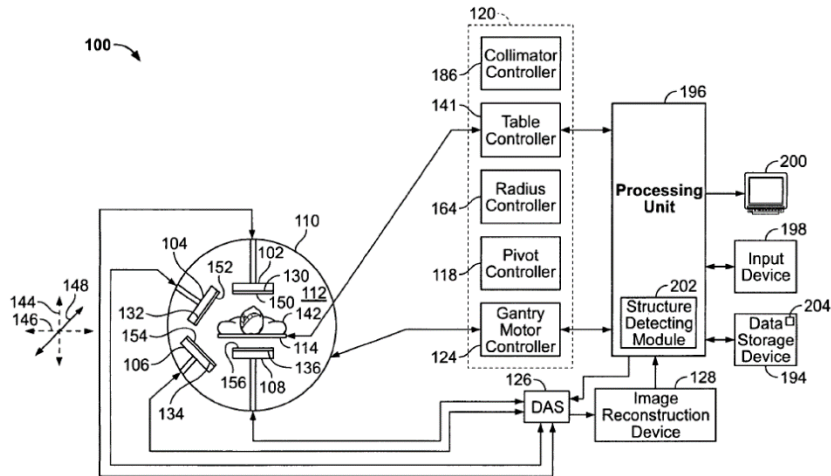


FIG. 1

34. With reference to FIGs. 2 and 3 of the '597 patent, which are reproduced below, each detector is mounted on a radial arm (identified by reference number 122), which is in turn mounted on a rotating gantry 110. (*Id.* at 3:25-28.) FIGs. 2 and 3 schematically depict portions of the gantry 110 for illustration, but the written description makes clear that the gantry 110 may be a full circle as depicted above in FIG. 1. (*Id.*)

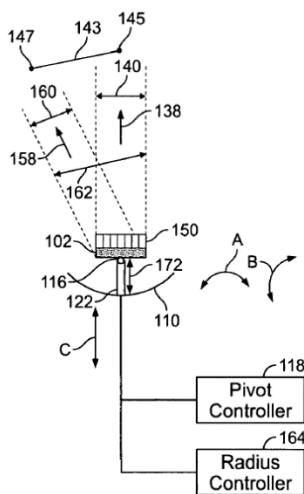


FIG. 2

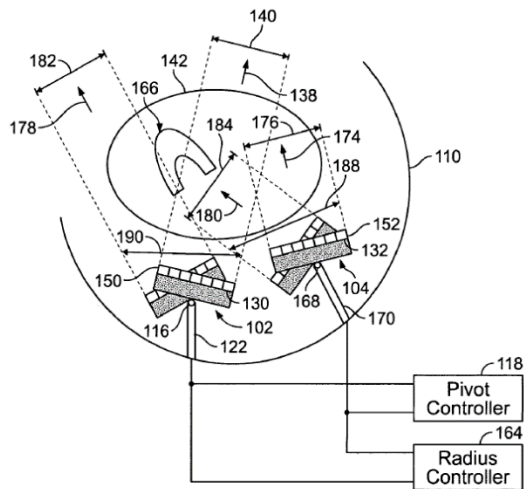


FIG. 3

35. The detectors are independently movable with respect to each other and move both radially (in/out), as indicated by reference number 172 in FIG. 2, and in a swiveling/pivoting motion. (*Id.* at 1:50-52, 4:43-47, 6:41-49.)

36. In its own words, the '597 patent teaches that:

A technical effect of the invention is efficiently imaging a structure of interest with an imaging system that has a plurality of imaging detectors with FOVs which may be smaller than the structure of interest. Each of the plurality of imaging detectors is small and may be separately positioned relative to the patient. The plurality of imaging detectors acquire images of the structure from different locations around the patient, and thus image data relevant to the structure of interest is acquired in a shorter period of time than with conventional large imaging detectors. Movement may be used during or between acquisitions to increase the effective FOV. The imaging detectors may be moved by pivoting axially and moving radially towards and away from the patient; the gantry may be rotated; . . . and/or the patient table may be moved.

(*Id.* at 9:15-30.)

37. Like the DeVito patent, GE's '597 patent teaches that the swiveling detectors could be configured in "rectangular" shapes "composed of a plurality of CZT pixilated modules" where "each module may be 4x4 cm in size[.]" (*Id.* at 3:6-13.) In my opinion, the disclosure of "rectangular" detectors made from 4 cm x 4 cm square CZT tiles would include a detector column 4 cm wide and any number of CZT modules long.

38. In addition, GE's '597 patent discloses the concept of focused scans in which each small swiveling detector spends more of its pivot range and imaging time focused on a particular structure of interest for improved imaging. (*Id.* at 5:59-6:18.) Specifically, the '597 patent teaches:

A pivot range 143 for each of the first through N imaging detectors 102-108 may be determined. For example, when imaging a structure that is larger than the actual FOV of the first imaging detector 102, the pivot range 143 may have a start point 145 at one end wherein the FOV images one outer edge of the structure. Optionally, a

predefined amount of surrounding tissue may be imaged. An end point 147 of the pivot range 143 may be set to image an opposite outer edge of the structure as well as a predefined amount of surrounding tissue. Therefore, a unique pivot range 143 may be defined for each of the imaging detectors that may be specific to a particular scan.

Alternatively, one or more of the first through N imaging detectors 102-108 may be moved through a fixed, predetermined pivot range 143. A rate or speed of pivoting may also be predetermined, set by an operator, or determined based on the anatomy being scanned, size of the structure, level of radiation detected, and the like. It should be noted that rate of pivoting need not be constant throughout the pivot range 143, may be different for a different axis of pivoting, and may be different for different imaging detectors or throughout the duration of the acquisition. For example, the rate of pivoting may be higher during parts of the pivoting range 143 wherein the first imaging detector 102 is aimed at the surrounding tissue. Thus, the first imaging detector 102 collects more data from the structure of interest than from the surrounding tissue.

(*id.* at 5:59-6:18).

39. Finally, the '597 patent discloses that its small, swiveling, CZT detectors may use collimators formed from "[f]lat sheets of tungsten cut into strips or vanes with material periodically removed to form a comb structure," where a first set of the strips are arranged parallel to one another along a first direction and second set of strips are arranged parallel to one another in a second direction which may be perpendicular to the first direction. (*Id.* at 8:18-24.) Thus, the '597 discloses square hole tungsten collimators, which Plaintiff claims [REDACTED]

[REDACTED].<sup>1</sup> In addition, the '597 patent expressly teaches that its collimators may be

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<sup>1</sup> I do not claim, nor do the Defendants, that GE or the named inventors of the '597 patent invented square hole tungsten collimators. Such collimators, though not yet in wide commercial use at this time, were already known. For example, U.S. Patent Application Publication 2005/0017182, filed July 25, 2003, published January 27, 2005, and assigned to Siemens, teaches a square hole tungsten collimator formed from interlocking slotted sheets. (Ex. 322.) In addition, it was a matter of public information by 2009 that Spectrum's cardiac-specific D-SPECT device, [REDACTED], used swiveling CZT detector columns with square hole, parallel beam, tungsten collimators. (Ex. 331 GE\_SDM\_00455167-175; Ex. 332, Major Achievements in Nuclear Cardiology, GE\_SDM\_00454843-864.)

“parallel beam collimators” (*id.* at 6:66; *see also id.* at GE\_SDM\_00570318 (Fig. 3)) and “constructed to be registered with the pixels of a pixilated detector such as CZT pixilated detector.” (*Id.* at 3:65-67.)

40. In my opinion, GE’s ’597 patent publicly disclosed every material design feature and concept of Spectrum’s proposed GPC *before* Spectrum presented its GPC design to GE in September 2009. The only design features not disclosed in the ’597 patent are: (1) [REDACTED]; (2) [REDACTED]; and (3) [REDACTED].

#### **V. Spectrum Publicly Disclosed the Features of the GPC During the Due Diligence Period**

41. It is my understanding from the allegations in Plaintiff’s Brief that just prior to the September 2009 meeting GE entered into a nondisclosure agreement (the “2009 NDA”) under which the parties could exchange confidential information for the purpose due diligence. (Doc. 356 at 2 (“GE and Spectrum engaged in due diligence discussions from 2009-2012.”); *id.* at 20.) Plaintiff admits that this due diligence period [REDACTED]. (*Id.* at 33.)

42. In my opinion, Spectrum publicly disclosed, during and immediately after the due diligence period, every feature of its proposed GPC that it now claims GE misappropriated.

43. The structural and operational features of the GPC ([REDACTED]) would inevitably become public once Spectrum introduced a product. Not surprisingly, therefore, Spectrum apparently made the decision to attempt to obtain patent protection for the GPC. However, Spectrum’s patent applications include not only details that would be visible from the outside of the GPC, but also

other details necessary to make and use the GPC that are not visible from the outside. These details became public when Spectrum's patent applications published during and after due diligence.

***Spectrum's '685 Application***

44. Spectrum filed a patent application for a "METHOD AND SYSTEM OF OPTIMIZED VOLUMETRIC IMAGING" on June 3, 2010 ("the '685 application"). (Ex. 333, US 2011/0026685, GE\_SDM\_00346940-966.) The '685 application published on February 3, 2011, and issued as U.S. Patent No. 8,338,788 on December 25, 2012.

45. The '685 application discloses a general-purpose SPECT imaging system that includes: (i) "a plurality of extendable detector arms each . . . having a detection unit having at least one radiation detector" which move "along a linear path"; and (ii) a "circular gantry" "which supports the plurality of extendable detector arms" and "rotates the plurality of detector arms around the body of the patient." (Ex. 333 ¶¶ 0010, 0019, 0084.) A variety of embodiments with different numbers of detector arms are shown in the '685 application.

46. Figures 2B-2D of the '685 application, which are reproduced below, schematically depict an embodiment in which 14 detector columns are mounted on a rotating gantry for independent radial movement to contour a patient's body. (*See id.* ¶ 0055.) Each column is contained within a cylinder 80 mm in diameter. (*See id.*) Fig. 2C shows all 14 detector columns contoured around the patient's torso. (*Id.* at GE\_SDM\_00346943.) Fig. 2D shows 7 of the 14 detector columns moved into close proximity for a brain scan. (*See id.*)

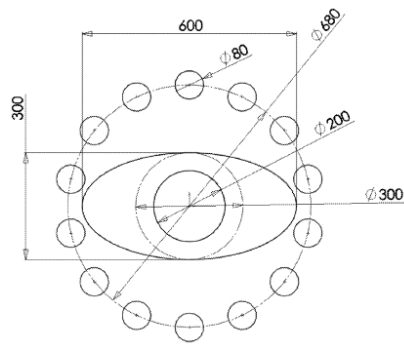


FIG. 2B

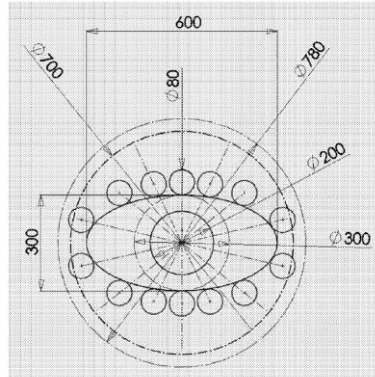


FIG. 2C

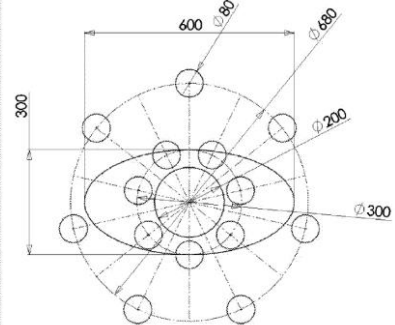
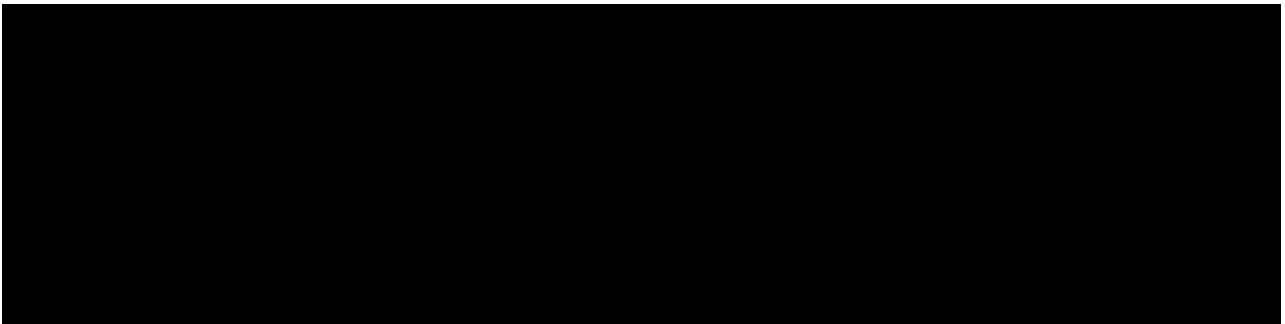


FIG. 2D

47. FIGs 2B-2D of the '685 application are the same figures that Spectrum presented to GE during the September 2009 meeting, which are reproduced below. (See Ex. 55 at SDML\_01279781-783.)



48. And [REDACTED], the '685 application reveals that its detectors are configured as columns of pixelated CZT modules that swivel. (Ex. 333 ¶¶ 0033 (“[E]ach detection unit comprises an array of a plurality of radiation detectors, each set to move in [a] sweeping motion.”); *id.* at GE\_SDM\_00346946 (FIG. 5A, showing a swiveling detector in the tip of an extendable detector arm); *id.* ¶¶ 0077, 0091.)

49. The '685 application also reveals that the collimator of each detector may be a “parallel hole collimator” made of tungsten. (*Id.* ¶¶ 0007, 0091.)

50. Other minute details are disclosed in the '685 application as well. For example, the linear actuator for each radially extendable detector arm may be “a step motor.” (*Id.* ¶ 0077.) And the septa length of the disclosed collimators may be “between about 2 cm and about 3 cm” with a hole diameter/width “between about 2 mm and about 3 mm” (i.e., matching the CZT pixel size, which is disclosed as “2.54x2.54 mm”). (*Id.* ¶ 0091.)

51. In addition, the '685 application discloses that the GPC “scanning is adapted to focus on a predefined region of interest” which may be “defined automatically and/or manually.” (*Id.* ¶ 0116.) In particular, “[t]he orientation ... of the detectors may be changed to acquire more data pertaining to the region of interest and/or the suspected pathological sites.” (*Id.* ¶ 0118.) Specific details of the focus scan pattern are also described including: “the semiconductor radiation detectors [] sweep among a number of positions” where “the angular opening and/or number of positions depend on the ROI, creating for example . . . 30, 50, 100, . . . or any intermediate or smaller number of positions for each radiation detector.” (*Id.* ¶ 0090.) In addition, “the radiation detector [] remains in each angular position for a time period of about 0.1 second, 0.2 second, 0.5 second, 0.8 second, 1 second, 1.5 second, 3 sec, and 5 sec.” (*Id.*)

52. Thus, [REDACTED], the '685 application fully discloses the GPC presented to GE by Spectrum at the September 2009 meeting.

***Nathaniel Roth's 2011 IEEE Article***

53. By January 2012, Spectrum claims to have “determined, after much study and testing (and simulations), [REDACTED] [REDACTED] [REDACTED] previously contemplated would also be optimal.” (Doc. 356 at 29-30.)

54. The “study” “testing” and “simulations” Spectrum is referring to appear to have been done by [REDACTED]. (Ex. 334 SDML\_00242735-36 (research plan “[REDACTED]”); Ex. 126; *see also* Roth Dep. (Ex. 306) at 47:13-48:18.)

55. [REDACTED], UCL compared simulated brain scans using all 14 detector columns of the GPC disclosed in Spectrum’s ’685 application to simulated brain scans using only 7 of the 14 detector columns (half), since 7 detectors could be moved closer to the patient without the detectors interfering with one another. (Ex. 373 at SDML\_00846077-78 (“[REDACTED]”). This concept of using a [REDACTED] was described in Spectrum’s published ’685 application and shown to GE. (*See* Ex. 333 at GE\_SDM\_00346943 (FIG. 2D); Ex. 60 at SDML\_01168793 (showing use of 7 of 14 detectors for brain scans).) The results of UCL’s analysis were reported in an unpublished conference abstract on May 10, 2011, concluding: “[REDACTED]” (Ex. 373 at SDML\_00846078.)

56. My understanding that UCL’s simulations [REDACTED] is confirmed by Mr. Roth’s response when Kjell Erlandsson of UCL [REDACTED] (Ex. 343 at SDML\_00846058.) [REDACTED]

[REDACTED]

[REDACTED] (*Id.* at SDML\_00846057.)

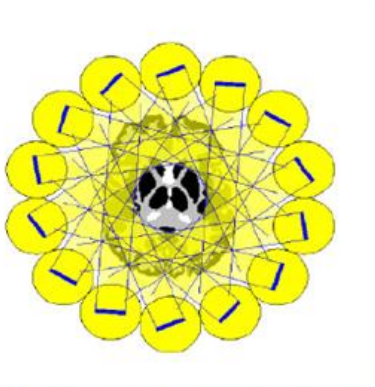
57. It appears that UCL subsequently expanded its analysis [REDACTED]

[REDACTED], and the results of that analysis were published in November 2011 in an article co-authored by the UCL team and Spectrum’s Nathaniel Roth for the Institute of Electrical and Electronics Engineers (“IEEE”) titled, “Assessing Possible Use of CZT Technology for Application to Brain SPECT (“Roth’s 2011 IEEE Article”). (Ex. 342.) Specifically, UCL “simulated SPECT systems with different numbers of detectors; 12, 13, 14, and 15 detectors placed at radial positions of 114, 127, 139, [and] 152 mm, respectively”<sup>2</sup> and reported that “[t]he best results were obtained with the smallest number of detectors (12).” (*Id.* at GE\_SDM\_00013160.)

58. The configuration of the SPECT system evaluated in Roth’s 2011 IEEE Article [REDACTED]. [REDACTED], the article describes simulating a SPECT system having multiple “CZT detector arrays placed in a circle around the patient” where “[t]he detectors can rotate about their own axis, in order to scan over the object. (*Id.* at GE\_SDM\_00013159.) Fig. 1 of the Roth 2011 IEEE Article, which is reproduced below, shows 14 swiveling detectors in a closed ring formation around a patient’s brain.

---

<sup>2</sup> [REDACTED]  
[REDACTED]  
[REDACTED]



**Fig. 1:** Illustration of the possible brain SPECT configuration with 14 detectors; possible central region highlighted.

59. And [REDACTED], the article disclosed: (1) “Transaxially, the detector arrays are 4 cm wide, consisting of 16 CZT pixels, and axially they are assumed to be long enough to cover the whole brain” (i.e., approximately 20 cm long meaning a detector column of 1 x 5 standard 4x4 cm CZT modules); (2) “Each detector is ... contained in an 80 mm diameter cylinder”; and (3) “The whole gantry can also rotate in order to fill gaps between the detectors.” (*Id.*)

60. Because the configuration of the SPECT system described in Roth’s 2011 IEEE Article is the same as the configuration described in Spectrum’s ’685 application, which is also [REDACTED]  
[REDACTED], Roth’s 2011 IEEE Article publicly discloses Spectrum’s preference for [REDACTED]  
[REDACTED] originally presented to GE. Specifically, Roth’s 2011 IEEE Article explains:

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<sup>3</sup> Of course, [REDACTED] are not new. In an article published in the Journal of Nuclear Medicine in 1984 (“Moore et al. Publication”), doctors at the Harvard Medical School and Brigham and Women’s Hospital describe a [REDACTED] SPECT brain scanner (shown in Fig. 1 of the article) on rotating gantry such that the entire array of detectors can be rotated two times between scans “so that 36 effective angular projections would be acquired at 10° intervals instead of 12 projections 30° apart.” (Ex. 313 at GE\_SDM\_00058314-15.)

Comparing systems with different number of detector arrays, the best results were obtained with a small number of detectors with a small radius. A larger radius allows for more detectors to be incorporated, resulting in higher sensitivity, although the geometric resolution will be poorer, placing greater demand on the resolution modeling. In this case, the increase in sensitivity did not fully compensate for the resolution degradation.

(Ex. 342 at GE\_SDM\_00013161.)

*The 2012 Hutton Publication*

61. Plaintiff alleges that Spectrum presented, and GE misappropriated, the concept of ROI focused imaging scans “[REDACTED]” (Doc. 356 at 14, 18, 22 ([REDACTED]).)

62. In my opinion, as further explained below, the “[REDACTED]” that Spectrum disclosed to GE is far narrower than the cherry-picked features listed by Plaintiff as having been misappropriated by GE. Nevertheless, in reliance on Plaintiff’s allegations as they are stated, it is further my opinion that all of the [REDACTED] identified by Plaintiff as having been misappropriated by GE were published during the due diligence period in 2012.

63. In 2012, with the assistance of Brian Hutton (UCL), and in cooperation with the University of Lisbon, Filipa Costa published a dissertation study entitled “EVALUATION OF THE D-SPECT SYSTEM: Region Centric Acquisition and Tracer Kinetics.” (“The 2012 Hutton Publication”) (Ex. 374.) As Plaintiff admits, the D-SPECT cardiac imaging device uses the [REDACTED]

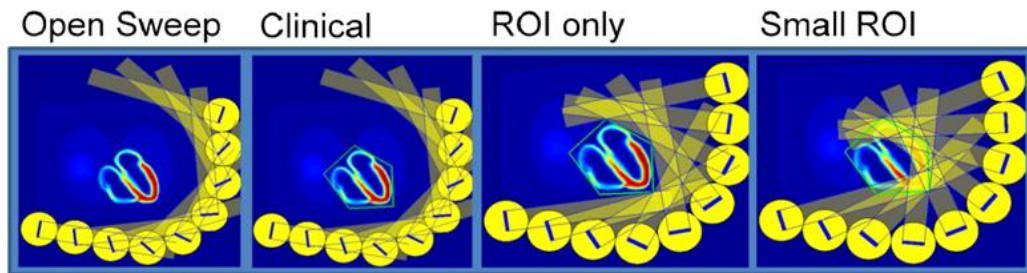
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<sup>4</sup> “[REDACTED]” (Metzler Dec. (Ex. 1) ¶ 141).

██████████. (Doc. 356 at 11.) As indicated by the title of the 2012 Hutton Publication, it is an evaluation of the region-centric scanning pattern of the D-SPECT. Although the 2012 Hutton Publication does not by itself disclose every detail of the ██████████, it does teach all of the focus scan features allegedly misappropriated by GE.

64. The 2012 Hutton Publication explains that “one of the biggest differences between D-SPECT and conventional SPECT is the selection of a ROI to create the scanning pattern.” (Ex. 374 at GE\_SDM\_00739412.) And, “[i]n order to know which ROI should be selected, a pre-scan is always done before each imaging process, to identify the position of the heart in relation to the chest and also to set the angle limits of scanning for each detector.” (*Id.* at GE\_SDM\_00739396.)

██████████ (*Id.* at GE\_SDM\_00739406 (“a ROI and a FOV can be selected”).) ██████████  
 ██████████ (*id.* at GE\_SDM\_00739413) ██████████ as depicted, for example, in the Clinical Scan shown in Fig. 3.4, which is reproduced below. (*See id.* at GE\_SDM\_00739414.)

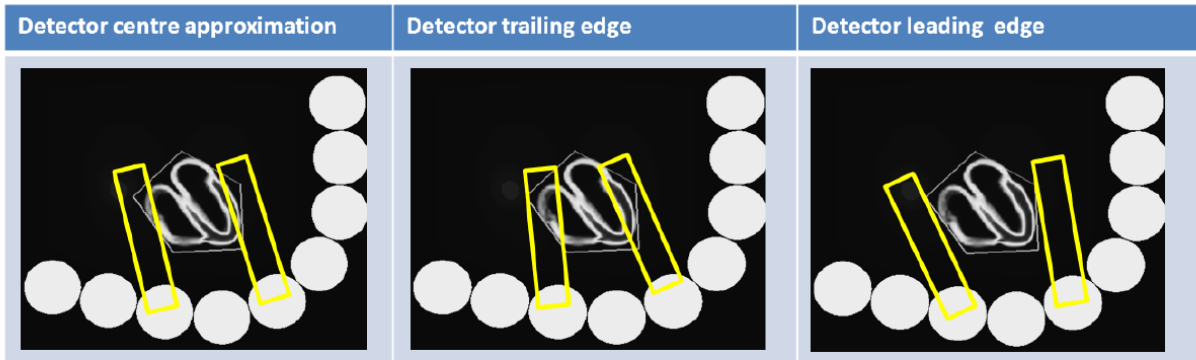


**Fig. 3.4.** Scheme of the four different scan patterns created. For Open sweep the whole FOV is scanned, the Clinical represent the scan pattern performed by D-SPECT clinically, where a ROI is defined and the detectors spend around 60% of the time scanning inside the ROI and the remaining time on the rest of the FOV. ROI only, only the ROI is scanned using detector leading edge algorithm to calculate the projections while for the small ROI the detector trailing edge was the one applied.

65. Still with reference to Fig. 3.4 above, the 2012 Hutton publication discloses that a “proportion of scan time on ROI (SPR)” may be set to “a value between 0 and 1, ... to define the

time, in percentile, that the detector will spend scanning the ROI.” (*Id.* GE\_SDM\_00739406-07). So, for example, “a scan proportion on ROI (SPR) equal to 0.6, simulat[es] a D-SPECT system that spends approximately 60% of the scanning time inside the ROI and the rest outside of the FOV.” (*Id.* at GE\_SDM\_00739412-13.) Likewise, the caption below Fig. 3.4 explains that the “Clinical” scan that is depicted “represent[s] the scan pattern performed by D-SPECT clinically, where a ROI is defined and the detectors spend around 60% of the time scanning inside the ROI and the remaining time on the rest of the FOV.” (*Id.* at GE\_SDM\_00739414).

66. To the extent Plaintiff is using the term “[REDACTED] [REDACTED] [REDACTED] (see Metzler Dec. (Ex. 1) ¶¶ 141-143), the 2012 Hutton Publication also discloses that feature in great detail. With continuing reference to Fig. 3.4 above, and further reference to Fig. 2.14, which is reproduced below, the “Small ROI” pattern above uses the detector trailing edge algorithm shown below such that “the detectors start acquiring when the trailing edge of the detector reaches the ROI, and stop acquisition when the leading edge of the detector finds the ROI.” (Ex. 374 at GE\_SDM\_00739407.) By contrast, the “ROI only” scan pattern above uses the detector leading edge algorithm below, such that “[t]he detectors start acquiring when the leading edge reaches the ROI and stops when the trailing edge reaches the ROI.” (*Id.*) In the “detector centre approximation” shown below, approximately 50% of the camera area is viewing the ROI when image acquisition begins and ends at the angular limits of the ROI. In other words, Fig. 2.14 of the 2012 Hutton Publication teaches “leading edge,” “trailing edge,” and “detector centre” options in which 100%, 0%, or 50% of the camera area, respectively, is looking inside the ROI when the detector reaches the edge of the ROI.



**Fig. 2.14.** The three different algorithms available in the model simulator used to calculate the scan patterns.

67. Thus, the 2012 Hutton Publications discloses a focused scanning pattern in which the motion plan is based on (i) [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

68. Plaintiff implicitly acknowledges, and Dr. Metzler expressly admits, [REDACTED]  
[REDACTED] [REDACTED]. (See Metzler Dep. (Ex. 308) at 134:6-13 (“[Q.] That’s not the [REDACTED] A. No.”; Metzler Dec. (Ex. 1) ¶ 139).

69. [REDACTED]

[REDACTED]

[REDACTED]

70. The [REDACTED]

[REDACTED]

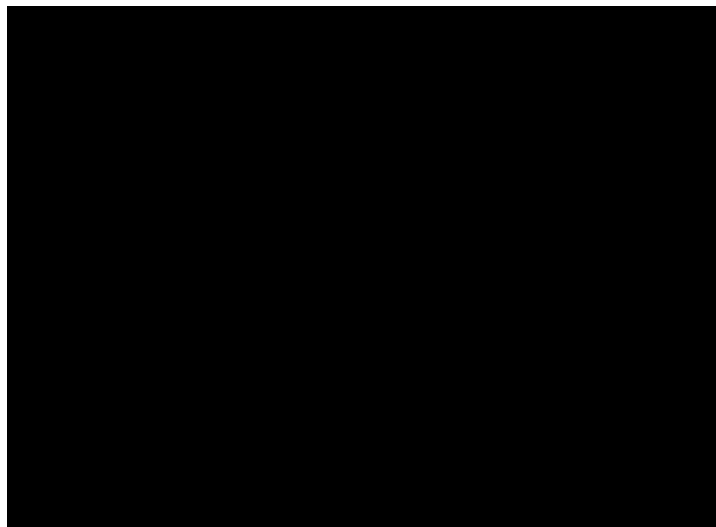
[REDACTED]. (Roth Dec. (Ex. 5) ¶¶ 27, 29; Metzler Dec. (Ex. 1) ¶ 138.) According to Nathaniel Roth, [REDACTED]

[REDACTED]. (Roth Dep. (Ex. 306) at 137:18-138:16). However, a consequence of [REDACTED]  
[REDACTED]  
[REDACTED], which is reproduced from paragraph 27 of Nathaniel  
Roth's Declaration (Ex. 5), [REDACTED]

71. Also, because the [REDACTED] (Roth Dec.  
(Ex. 5) ¶ 28), [REDACTED]. (Metzler  
Dec. (Ex. 1) ¶ 138 (“[REDACTED]  
[REDACTED]). In the [REDACTED]  
[REDACTED]  
[REDACTED]. (Metzler Dep. (Ex. 308) at 107:20-111:10.) [REDACTED]

[REDACTED] (*Id.*) Therefore, in some cases, the amount of data  
[REDACTED]  
[REDACTED]

72. In contrast to the [REDACTED], [REDACTED]  
[REDACTED] With reference to the figure below,  
which is also reproduced from paragraph 7 of Nathaniel Roth's Declaration (Ex. 5), [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]



73. Dr. Metzler admits that this is [REDACTED]. (Metzler Dep. (Ex. 308) at  
134:6-13 (“[Q.] That’s not the [REDACTED], right? A. No.”; Metzler Dec. (Ex. 1) ¶ 139.) [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] (Metzler Dec. (Ex. 1) ¶ 139.)

This could potentially make a material difference with respect to data sampling and image quality depending on the shape and location of the ROI.

74. [REDACTED]

[REDACTED] GE's '597 patent, in which the scanning rate of each detector in the ROI can be independently set. But in any event, the [REDACTED] also appears to have been publicly disclosed in 2012. Specifically, in another dissertation published in 2012 in cooperation with the University of Lisbon, the D-SPECT scanning pattern, which is the [REDACTED] is described in great detail. (Ex. 380.) The publication explains:

The way the scanning pattern algorithm works is the following: it determines which detector is the closest to the ROI, then it calculates the angular sampling for this detector taking into account that 80% of the views must be taken from inside the ROI limits. In general, this results in sampling of 0.5 degrees per view. The angular sampling for the remaining detectors is set to be the same. Usually, the number of views per detector is 60 per scan, which produces a sinogram with 120 projections per detector. In conclusion, each detector will spend more time acquiring data from the ROI compared to the sampling in the remaining FOV, maximizing the number of acquired counts from this region.

(*Id.* at (GE\_SDM\_00440101.)) In addition, the publication teaches the same “leading edge,” “trailing edge,” and “center approximation” options that Dr. Metzler seems to refer to as the [REDACTED] (*Id.* at GE\_00440122-23.)

### *Spectrum's '721 PCT*

75. Plaintiff claims that by January 2012 “Spectrum had gone a long way to finalizing its GPC design” including the selection of [REDACTED] [REDACTED] (Doc. 356 at 29-30.)

Elsewhere in its brief Plaintiff describes its “unique collimator” as a [REDACTED]

(*Id.* at 14.)

76. Just a few months later, in May 2013, Spectrum filed a 122-page international patent application (“the ’721 PCT application”), titled “Nuclear Medicine Tomography Systems and Methods,” that published shortly thereafter on November 14, 2013. (Ex. 344.) The named inventors are the same as Spectrum’s ‘685 application: Zilberstien, Roth, Rousso and Ben Haim. (*See id.*)

77. In my opinion, the '721 PCT publicly discloses every [REDACTED] that Plaintiff claims GE misappropriated (*see* Doc. 356 at 17-18) except for [REDACTED], which as explained above was already publicly disclosed in 2012.

78. Figures 6A and 6B of the '721 PCT application are reproduced below. They appear to be [REDACTED] (*Compare* Ex. 76 with Ex. 344 at GE\_SDM\_00380855.)

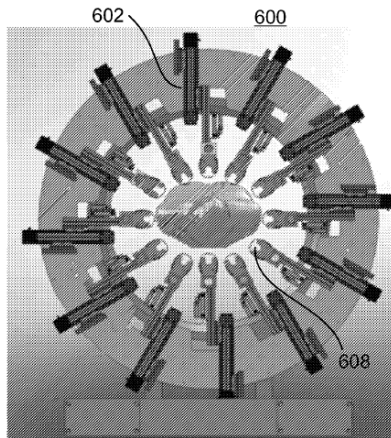


FIG. 6A

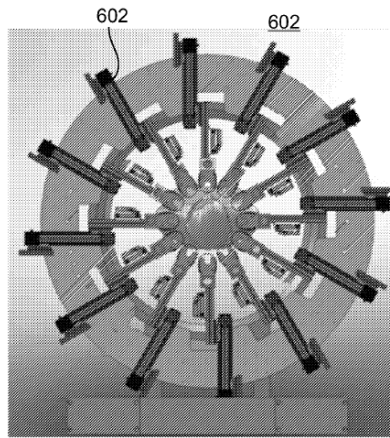


FIG. 6B

79. The '721 PCT application discloses to the public, once and for all, [REDACTED]

██████████, where FIG. 6B shows all 12 detectors in use for a brain scan as described in Roth's 2011 IEEE Article. (*See* Ex. 342 at GE\_SDM\_00013161). The detector heads at the end of each radial arm swivel about an axis parallel to the system axis (Ex. 344 at 10:26-27, 26:25-26), and the gantry on which the arms are mounted rotates "to rotate the detector heads around the subject carrier to provide 360 degree coverage around the patient carrier with substantially no gaps for a selected bore size." (*Id.* at 11:4-6.)

80. The '721 PCT application teaches that "extension and/or retraction of the individual detector heads may be achieved . . . for example, with . . . a stepper motor" (*id.* at 51:11-13) and "the detector arrays are counterbalanced on the linear actuator arms so the force needed to extend the detector arrays is acceptably small . . . using a stepper motor." (*Id.* at 31:29-32:1.) Specifically, with reference to Figures 6E and 6F, the '721 PCT application teaches: "A weight 632 chosen to balance the weight of detector head 622 and arm 626 is moveably mounted on rail 628 and attached to arm 626 for example, by a suitable pulley arrangement." (*Id.* at 51:26-27.) Thus, when driven, "the detector head and counterweight move in opposite directions" with very little force. (*Id.* at 52:9-11.)

81. Spectrum's '721 PCT application also teaches that each of the detector heads may be configured as an array of multiple CZT modules (*see id.* at 16:9-10, 22:27-30), and provides examples of dimensions of such a detector. Specifically, the application offers an exemplary circumferential dimension (essentially, the width of the detector) of 4 cm and an exemplary axial dimension (essentially, the length of the detector) of 28 cm. (*See id.* at 47:29 – 48:5). Industry-standard CZT tiles are 4 cm by 4 cm, the same as the CZT tiles described in GE's '597 patent. Thus, a ██████████ as described in the '721 PCT application, is a ██████████. Although the '721 PCT also lists several other options for the axial length of the detector

column, I consider the [REDACTED] to be a simple matter of design choice based on a straightforward cost benefit analysis.

82. Spectrum's '721 PCT application also discloses [REDACTED], including I believe, [REDACTED].

83. The '721 PCT application reveals that "the collimator septa are formed of tungsten" (Ex. 344 at 17:17) [REDACTED] "egg-crate" array. (*Id.* at 67:27-68:6.) Thus, "the collimator cells are square." (*Id.* 15:10.)

84. The '721 PCT application reveals that "the septa length may be different in the X and Y direction" (i.e., anisotropic or asymmetrical) [REDACTED]. (*Id.* at 69:10.)

85. The '721 PCT application reveals that "the collimator septa are aligned with the pixel-pitch of the detector, i.e., the septa are positioned at the borders of each pixel" (*Id.* at 75:25-26.)

86. In addition, the '721 PCT application reveals that the GPC collimator may be [REDACTED]. (*Id.* at 76:16-25 ("[T]he septa pitch is smaller than the pixel pitch, for example according to an integer ratio of 1:2.... This may be achieved by positioning one or more additional septa at the middle of a pixel to provide multiple collimator cells within each pixel.")). The benefit of this design, as explained by the '721 PCT, is that:

With this configuration it is possible to obtain a particular viewing angle (collection angle) with shorter collimator septa. For example, if for a certain desired collection angle one would use a pixel pitch of 3.5 mm and a single collimator cell per pixel with septa length of about 20mm, similar performance can be obtained by providing two collimator cells per pixel with a septa length of 10mm. Shorter septa may be advantageous since they may permit having smaller detector head with better maneuverability.

(*Id.* at 76:19-25.)

87. [REDACTED], '721 PCT application proposes an exemplary collimator “formed of tungsten septa about 0.2mm in thickness, and having 1.03 mm square cells, with a pitch of 1.23mm and height in the Z-direction of 14.5mm, and overall horizontal septa of 10.8 mm.” (*Id.* at 70:3-6.) Based on the information available to me, I believe that these are the [REDACTED] (Ex. 345 (“[REDACTED] [REDACTED]”).))

**VI. GE Could Not Calculate the Collimator Dimensions from Just Performance Parameters**

88. Plaintiff claims to have supplied GE with a PowerPoint presentation in February 2012 that [REDACTED]” (Doc. 356 at 31 (citing Ex. 76) (emphasis added).) Dr. Metzler states that “[REDACTED] [REDACTED]” (Metzler Dec. (Ex. 1) ¶ 74 (citing Ex. 76 at SDML\_00038494) (emphasis added).)

89. The only information provided regarding Spectrum’s GPC collimator in Exhibit 76, including at SDML\_00038494, is that [REDACTED] [REDACTED] [REDACTED]. I do not agree with any suggestion that Exhibit 76 shows [REDACTED] [REDACTED]

90. My understanding, as stated above, is that the GPC collimator listed in Exhibit 76 is a [REDACTED] [REDACTED] (See Ex. 345 (“[REDACTED] [REDACTED]”).)

91. Plaintiff and Dr. Metzler allege that “GE could easily use the information in this presentation [Ex. 76] to calculate the [REDACTED].” (Doc. 356 at 31; Metzler Dec. (Ex. 1) ¶ 75.) I disagree with that statement even if it is first assumed that the GPC collimator [REDACTED] neither of which is disclosed in the presentation.

92. I agree with Dr. Metzler that it is not possible to determine that the GPC collimator listed in Exhibit 76 is a [REDACTED] that are provided in Exhibit 76. (See Metzler Dep. (Ex. 308) at 71:20-72:10; 75:3-13.)

93. I also agree with Dr. Metzler that is not possible to calculate the dimensions of the GPC collimator listed in Exhibit 76 unless you first assume that it is a [REDACTED]. (See *id.* at 82:3-12 (“[REDACTED]”); *id.* at 82:14-83:18, 86:13-88:20.)

94. I agree with Dr. Metzler that it is not possible to determine that the GPC collimator listed in Exhibit 76 is [REDACTED] that are provided in Exhibit 76 – including just one [REDACTED]. (See *id.* at 22:10-23:22.)

95. I also agree with Dr. Metzler that it is not possible to calculate the exact [REDACTED] [REDACTED] listed in Exhibit 76 merely from the [REDACTED] [REDACTED] listed in Exhibit 76 unless it is first assumed that the GPC collimator is [REDACTED]. (See *id.*)

96. In my opinion, unless Spectrum revealed to GE that the GPC collimator listed in Exhibit 76 was a [REDACTED], GE could not have determined that it was [REDACTED] provided in Exhibit 76.

97. It is also my opinion that a [REDACTED] provided in Exhibit 76 could be devised.

### **VII. Simulations of the GPC**

98. Plaintiff's VP of R&D and Clinical Research, Nathaniel Roth, claims in his declaration that GE did not have the capability to simulate the GPC that Spectrum presented to GE in 2009, so Spectrum [REDACTED] (Roth Dec. (Ex. 5) ¶¶ 44-45 (" [REDACTED] " and " [REDACTED] " (emphasis added).) He also claims that GE then tried for more than a month to duplicate the simulations that he claims Spectrum provided to GE during the June 15-17 2010 meeting, but GE was never able to prepare their own simulations. (*Id.* ¶ 46 (" [REDACTED] " " [REDACTED] " (emphasis added).)

99. Roth also testified during his deposition that he [REDACTED] [REDACTED] using Spectrum's own in-house simulation software and presented reconstructed images [REDACTED] [REDACTED] (See Roth Dep. (Ex. 306) at 107:2—112:4.) He claims that GE did not present simulations of the GPC to Spectrum in June 2010 and, in fact, never presented Spectrum with GPC simulations. (See *id.* at 123:12-16; 124:16-25; 125:6-10.)

100. Based on my review of documents produced by both parties in discovery (summarized below) it does not appear that Mr. Roth's sworn testimony is correct. [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]. Therefore, Roth's testimony that he [REDACTED]  
[REDACTED]  
[REDACTED]. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED].

101. In advance of the [REDACTED] between GE and Spectrum, GE sent an agenda requesting "[REDACTED]  
[REDACTED]." (Ex. 147; Roth Dec. (Ex. 5) ¶ 44.) In addition, on June 11, 2010, GE's Shuchi Varandani sent an email to Spectrum with the subject "[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]

[REDACTED]” (Ex. 356.) On the same day Sharon Alon forwarded Shuchi Varandani’s email to the Chief Technology Officer of Spectrum, Yoel Zilberstien.

102. The next morning Zilberstien circulated an internal message to Spectrum’s team stating: “[REDACTED]

[REDACTED]

[REDACTED]” (Ex. 356 (emphasis added).)

103. One of the recipients of Zilberstien’s message then wrote to Zilberstien suggesting: “[REDACTED]

[REDACTED]” (Ex. 377.)

104. On [REDACTED]

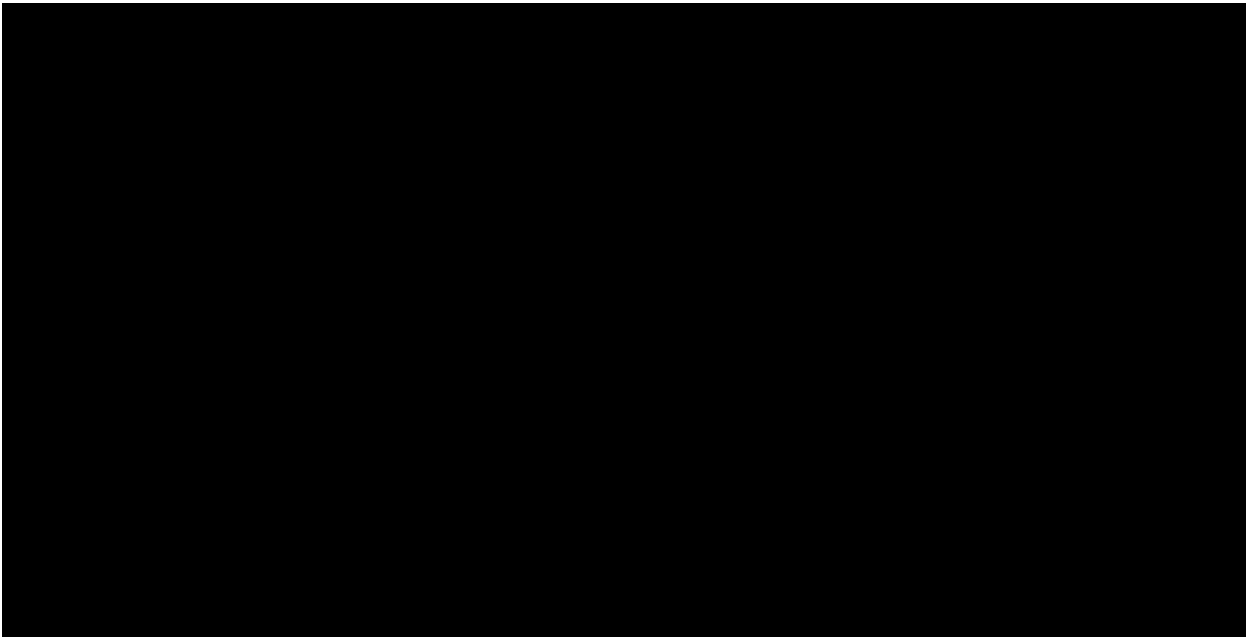
[REDACTED]

[REDACTED]. (Ex. 375.) The attachment (Ex. 375 at SDML\_00342266-268) appears to be [REDACTED]

[REDACTED]. (Ex. 376.) One slide of [REDACTED]

[REDACTED]. (Ex. 376 at SDML\_01274438.) Given that [REDACTED]

[REDACTED].



105. The same image is included in the presentation Roth sent to Zilberstien with the title “[REDACTED]” (Ex. 375.)

106. My understanding is that GE’s representatives [REDACTED], including Floris Jansen and Jean Paul Bouhnik, do not recall Spectrum presenting any [REDACTED] [REDACTED]. (See Bouhnik Dec. (Ex. 302) ¶¶ 16, 22 ; Jansen Dec. (Ex. 303) ¶¶ 9, 12, 21, 25.)

107. Shortly after their June 15-17, 2010 meeting, [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]” (Ex. 349 at GE\_SDM\_00005358.)

108. [REDACTED]  
[REDACTED]  
(*Id.*)

109.

” (*Id.* at GE\_SDM\_00005355-56.)

110.

(*Id.*)

111.

(Ex. 154.)

(*Id.* at GE\_SDM\_00005376 (emphasis added).)

(*Id.*)

[REDACTED] (*Id.* (emphasis added).)

112. [REDACTED]

[REDACTED] (Ex. 349 at GE\_SDM\_00005355.) [REDACTED]

[REDACTED]

[REDACTED] (*Id.*)

113. On August 3, 2010, Jean-Paul Bouhnik at GE forwarded GE's raw simulated projection data – as requested and promised – for Spectrum to reconstruct into an image for comparison to GE's simulations. (Ex. 64.)

114. On August 4, 2010, Spectrum's Nathaniel Roth writes to GE's Floris Jansen and Alex Ganin stating: "[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]" (Ex. 350.) The same day, Roth forwarded GE's simulation data to [REDACTED]

[REDACTED]

[REDACTED]" (Ex. 352 (emphasis added).) Also on the same day, Zilberstien writes: [REDACTED]

[REDACTED]

[REDACTED] (Ex. 378.)

115. On August 16, 2010, Nathaniel Roth writes to Floris Jansen and Alex Ganin at GE stating: "[REDACTED]

[REDACTED]" (Ex. 60.) Attached is a presentation that includes [REDACTED]

[REDACTED] (*Id.* at SDML\_01168803-811.) In [REDACTED] in Exhibit 376 (at SDML\_01274438), which showed [REDACTED], the simulation set up for Spectrum's GPC bone scan shows [REDACTED]. (Ex. 60 at SDML\_01168803.) [REDACTED]

[REDACTED]. This supports my conclusion that the [REDACTED] was not actually simulating the GPC.

116. On November 9, 2010, Spectrum’s Nathaniel Roth writes an email to [REDACTED] [REDACTED]” (Ex. 379.) The attachment to the email is identified as [REDACTED] [REDACTED] [REDACTED] (*Id.* (emphasis added).) The presentation includes [REDACTED] [REDACTED]. The only text in Roth’s email message is [REDACTED] (*Id.*)

117. The next day, November 10, 2012, Nathaniel Roth sends to [REDACTED] [REDACTED] (Ex. 337 at SDML\_00803703-04.) The summary lists [REDACTED] [REDACTED] (*Id.* at SDML\_00803703.) Attached along with the meeting summary are [REDACTED]. (*Id.* at SDML\_00803699-702.) I believe, given the context, that the [REDACTED] [REDACTED] provided to Spectrum.

118. [REDACTED] to Spectrum. (Ex. 382.) I believe, but am not sure, that the date on which [REDACTED] [REDACTED]. (Ex. 383.) [REDACTED] [REDACTED] (Ex. 382 at SDML\_01061825) [REDACTED] [REDACTED] (Ex. 60 at SDML\_01168803), I believe that Spectrum [REDACTED] [REDACTED] (Ex. 359). I do not know [REDACTED] [REDACTED] to be bound by the terms of the 2009 NDA with GE.

### **VIII. Conclusions**

119. The major design features of the GPC system that Spectrum claims GE misappropriated in developing GE's StarGuide, [REDACTED] [REDACTED] [REDACTED] [REDACTED], appear in GE's own '597 patent filed prior to the NDA between the companies and/or were already publicly disclosed by that time in the DeVito patent. All other

details of Spectrum's GPC, [REDACTED]  
[REDACTED] were made public by Spectrum during and immediately after the due diligence period through Spectrum's own patent applications and other publications. In my opinion, the features of the GPC that Spectrum claims GE misappropriated do not qualify as confidential information because they were either independently developed by GE, already known to GE, or publicly disclosed by Spectrum through no fault of GE.

*I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.*

Dated: October 25, 2021

A handwritten signature in cursive script, appearing to read "Todd Peterson", written over a horizontal line.

Todd Peterson

**Declaration of Todd Peterson, Ph.D.: Appendix A****Index of Exhibits**

<b>Exhibit Number</b>	<b>Description</b>
1	Declaration of Scott D. Metzler, Ph.D. dated August 27, 2021.
5	Declaration of Nathaniel Roth dated August 26, 2021 in Support of Plaintiff's Motion for a Preliminary Injunction. (HIGHLY CONFIDENTIAL-ATTORNEYS' EYES ONLY)
55	Email dated September 16, 2009 from Jim Haisler to Yoel Zilberstien, Nathaniel Roth, Benny Rouso, and Gilad Yoeli Re: Agenda and Latest PPT Presentation For Today including 2 attachments "SD GE Agenda 9 16.docx" and "Adaptive Scanning Sept 15.pptx" (SDML_01279739-807). (HIGHLY CONFIDENTIAL-ATTORNEYS' EYES ONLY)
57	September 16, 2009 Transcript of Meeting (SDML_01605095-01605577). (CONFIDENTIAL)
60	Email dated August 16, 2010 from Nathaniel Roth to Floris Jansen (GE Global Research), Alexander Ganin (GE Healthcare), Jean-Paul Bouhnik (GE Healthcare), Yoel Zilberstien, Ran Ravhon, and Gilad Yoeli Re: GPC simulation including an attachment/PowerPoint presentation titled "Spectrum Dynamics GPC Simulations" (SDML_01168791-816). (HIGHLY CONFIDENTIAL-ATTORNEYS' EYES ONLY)
64	Email dated August 3, 2010 from Jean-Paul Bouhnik to Yoel Zilberstien, Floris P Jensen, Alexander Ganin, and Shuchi Varandani RE: project data (containing in the chain an Email dated August 3, 2010 from Floris Jansen to Jean-Paul Bouhnik (GE Healthcare), Alexander Ganin (GE Healthcare), and Ravindra Manjeshwar (GE Global Research) RE: projection data including an attachment/PowerPoint presentation "Spotlight simulations – data conventions – August 2010" by Floris Jansen) (SDML_00733345-53). (HIGHLY CONFIDENTIAL-ATTORNEYS' EYES ONLY)
76	Email dated February 15, 2012 from Nathaniel Roth to Riyadh Mahameed (GE Healthcare) and Yoel Zilberstien RE: Draft – Urgent (SDML_00038490-91) including a GPC Alpha Demo video (SDML_00038492) and a PowerPoint presentation titled "GPC Simulations work" (SDML_00038493-98). (HIGHLY CONFIDENTIAL-ATTORNEYS' EYES ONLY)
126	PowerPoint presentation "UCL – GPC Status – 05/09/2011" (SDML_01174557-68). (HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY)

Exhibit Number	Description
147	Email dated June 11, 2010 from Sharon Alon to Yuri Shoshan, Jim Haisler, Yoel Zilberstien, and Gilad Yoeli RE: FW: Project Spotlight – 6/10 Question Log & Onsite Agenda including 2 attachments/spreadsheets “Spotlight Due Diligence Questions 06.10.10.xls” and “Spotlight_OnsiteDD_Agenda_v9.xls” (SDML_01061290-94). (HIGHLY CONFIDENTIAL-ATTORNEYS’ EYES ONLY)
154	Email dated August 1, 2010 from Alexander Ganin (GE Healthcare) to Jean-Paul Bouhnik (GE Healthcare), Floris Jansen (GE Global Research), Riyad Mahameed (GE Healthcare), Nathan Hermony (GE Healthcare), Aharon Peretz (GE Healthcare), Osnat Zak (GE Healthcare), Reuven Brenner (GE Healthcare), Tzachi Rafaeli (GE Healthcare), Terri Bresenham (GE Healthcare, GE Officer), and Shuchi Varandani (GE Healthcare) RE: spotlight visit – review of simulation (GE_SDM_00005376-77). (HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY)
302	Declaration of Jean-Paul Bouhnik dated October 26, 2021 (HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY)
303	Declaration of Floris Jansen dated October 25, 2021 (HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY)
306	Deposition of Nathaniel Roth (Transcript) (September 30, 2021)
308	Deposition of Scott Metzler, Ph.D. (Transcript) (September 24, 2021)
313	Publication titled "Carbide 1970 Publication.pdf" by Moore et al. (GE_SDM_00058314 - GE_SDM_00058317).
314	U.S. Patent No. 7,592,597 to Hefetz et al. (GE_SDM_00570315 - GE_SDM_00570327).
321	U.S. Patent No. 6,242,743 to DeVito et al. (GE_SDM_00061677 - GE_SDM_00061705).
322	U.S. Patent Application No. Application No. 10/627,844, to Joung et al. (Siemens), filed July 25, 2003, Pub. No. 2005/0017182, published January 27, 2005. (GE_SDM_00739362 - GE_SDM_00739368).
331	Publication titled "A Novel High-Sensitivity Rapid-Acquisition Single-Photon Cardiac Imaging Camera" by Gambhir et al. (GE_SDM_00455167 - GE_SDM_00455175).

Exhibit Number	Description
332	Publication titled "Advances in technical aspects of myocardial perfusion SPECT imaging" by Slomka et al. (GE_SDM_00454843 - GE_SDM_00454864).
333	Publication titled "Advances in technical aspects of myocardial perfusion SPECT imaging" by Slomka et al. (GE_SDM_00454843 - GE_SDM_00454864).
334	Document titled "Work plan for 2010 related to Spectrum Dynamics.doc" (SDML_00242735 - SDML_00242736). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
342	Publication titled "Assessing possible use of CZT technology for application to brain SPECT" by Erlandsson, Howell, Roth, and Hutton (GE_SDM_00013159 - GE_SDM_00013163).
343	Email dated May 6, 2011 from Brian Hutton to Yoel Zilberstien, Nathaniel Roth, and Kjell Erlandsson RE: RE IEEE MIC submission (SDML_00846057 - SDML_00846059). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
344	International Patent Application No. PCT/IB2013/053721, International Publication Number WO 2013/168111 A2 to Roth et al. filed May 8, 2013 and published November 14, 2013 (GE_SDM_00380755 - GE_SDM_00380876).
345	Email dated December 13, 2011 from Nathaniel Roth to Sajed Haj-Yahya RE: FW [REDACTED] collimator length (SDML_01516211 - SDML_01516211). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
349	Email dated August 2, 2010 from Yoel Zilberstien to Shuchi Varandani and Jim Haisler RE: FW: Yoel (GE_SDM_00005355 - GE_SDM_00005358). (Confidential)
350	Email dated August 4, 2010 from Nathaniel Roth to Floris Jansen, Alexander Ganin Yoel Zilberstien, Ran Ravhon, and Shuchi Varandani RE: GPC Simulation (SDML_00342681 - SDML_00342681). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
352	Email dated August 4, 2010 from Nathaniel Roth to Ran Ravhon and Rafael Baavour RE: GE [REDACTED] (SDML_01168571 - SDML_01168571). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
356	Email dated June 12, 2010 from Yoel Zilberstien to Sharon Alon, Gilad Yoeli, Jim Haisler, and Yuri RE: RE Project Spotlight - Onsite Agenda - [REDACTED] (SDML_00243496 - SDML_00243499). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)

Exhibit Number	Description
359	Email dated August 30, 2010 from Floris Jansen to Nathaniel Roth, Jean-Paul Bouhnik, Ravindra Manjeshwar, and Ran Ravhon RE: RE: [REDACTED], [Native Attachments Omitted] (GE_SDM_00366607 - GE_SDM_00366614). (Confidential)
362	Email dated January 29, 2006 from Yoel Zilberstien to Martin Sandler RE: RE Yoel (SDML_00486114 - SDML_00486114). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
373	Document titled "Assessing possible use of CZT Technology for application in brain SPECT" by Kjell Erlandsson, Elizabeth Howell, and Brian Hutton (SDML_00846077 - SDML_00846078). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
374	Publication titled "Evaluation of the D-SPECT System: Region Centric Acquisition and Tracer Kinetics" by Filipa Alexandra Pina Barrento Da Costa (2012 Hutton Publication) (GE_SDM_00739369 - GE_SDM_00739465).
375	Email dated June 13, 2010 from Nathaniel Roth to Yoel Zilberstein RE: What do you think? Should we show to GE?, including 1 attachment titled "UCL dspect_sim.ppt" (SDML_00342266 - SDML_00342268). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
376	PowerPoint titled "UCL dspect_sim.pptx" (SDML_01274427 - SDML_01274444). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
377	Email dated June 13, 2010 from Yuri Shoshan to Yoel Zilberstien RE: RE Project Spotlight - Onsite Agenda - [REDACTED] (SDML_00722657 - SDML_00722660). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
378	Email dated August 4, 2010 from Yoel Zilberstien to Adi Nahmani and Nathaniel Roth RE: RE [REDACTED] (SDML_00733710 - SDML_00733710). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
379	Email dated November 9, 2010 from Nathaniel Roth to Kjell Erlandsson and Brian Hutton RE: [REDACTED], including 1 attachment titled "SPECTRUM DYNAMICS - FIRST GPC SIMULATION.pdf" (SDML_01274551 - SDML_01274571). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)

Exhibit Number	Description
380	Publication titled "Evaluation of the D-SPECT System: Geometry Considerations and Respiratory Motion" by Debora Sofia Almeida Silva Salvado (GE_SDM_00440076 - GE_SDM_00440193).
382	Document titled "[REDACTED]" by kerlands (SDML_01061823 - SDML_01061841). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)
383	Email dated June 1, 2011 from Nathaniel Roth to Kjell Erlandsson RE: RE presentation (SDML_01172247 - SDML_01172247). (HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY)